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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,715	04/16/2004	Charles A. Miller	P213-US	2196

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EXAMINER	
MOFFAT, JONATHAN	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 01/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/826,715	MILLER, CHARLES A.	
	Examiner	Art Unit	
	Jonathan Moffat	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *1,2-6, 11-17* is/are allowed.

6)☒ Claim(s) *18,26 and 27* is/are rejected.

7)☐ Claim(s) *7-10,19-25 and 28-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendments to the claims and specification, filed 1/9/2006, are accepted and appreciated by the examiner. All prior objections to the drawings, specification, and claims are withdrawn.

Claim Objections

Claims 7-10 are objected to because of the following informalities:

Claims 7-10 all depend upon claims that now already include the limitation of a 'varying step comprises varying said calibration signal from an initial frequency that corresponds to a quarter wave or an integer multiple of a quarter wave with respect to an estimated length of one of said communications channels'. These claims are now redundant and should be corrected to maintain a proper and formal record.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.

Claims 26 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated Gerrish (US pat 6449568).

With respect to claim 26, Gerrish discloses a method comprising:

1) Determining a first frequency of a calibration signal driven onto a proximal end of a transmission line while said transmission line is terminated in a known impedance that causes a particular condition in a varying standing wave on said transmission line (column 3 lines 32-40).

2) Determining a second frequency of said calibration signal while said transmission line is terminated in an unknown impedance that causes said particular condition on said transmission line (column 3 lines 45-49).

3) Calculating a value of said unknown impedance (column 3 line 49 and column 2 line 58-63).

With respect to claim 27, Gerrish discloses that the known impedance is one of an open or a short (column 3 lines 35-38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto (US pat 5,811,655) in view of McGibney (US pat 6594273).

Hashimoto discloses an apparatus comprising:

1) Drivers for driving test data through said communications channels to terminals of an electronic device under test, and wherein each said communications channel terminates in a probe for contacting one of said terminals of said electronic device (Fig 1 items 60 and 69).

2) A signal generator configured to sweep a calibration signal from an initial frequency through a range of frequencies, wherein said calibration signal is input into said drivers and driven onto said communications channels (Fig 1 item 90).

3) A plurality of delay determination means (Fig 1 item 82).

4) A plurality of delay determination means (Fig 1 item 82).

With respect to claim 18, Hashimoto fails to disclose:

3) An envelope detector having an input connected to a drive end of said communications channel.

4) A wave-form detector connected to an output of said envelope detectors, said wave form detector configured to detect one of a null or a peak.

McGibney teaches, with respect to claim 18:

3) An envelope detectors having an input connected to a drive end of said communications channel (Fig 8 item 78).

4) A wave-form detector connected to an output of said envelope detector, said wave form detector configured to detect one of a null or a peak (Fig 8 item 98).

It would have been obvious to one of ordinary skill in the art to replace the delay determination circuit of Hashimoto with the envelope detector and wave-form detector of McGibney. Both components are used for delay calibration, though Hashimoto is not as specific as to the exact components that are to be used.

Response to Arguments

In response to applicant's argument concerning the assertion that the start of a calibration cycle begin at a quarter or half wave frequency with respect to transmission line length, the

examiner respectfully withdraws all previous rejections of those claims. Prior art of record does not show or teach this inventive step adequately to render it as obvious.

In response to applicant's argument concerning the combination of references, although moot in light of the examiner's new grounds for rejection, the examiner respectfully disagrees. Although such combination may not have been mentioned or hinted at in the reference, this does not mean that modification in many ways is both desirable and obvious to one of ordinary skill in the art in view of other prior art. The use of an oscilloscope, for instance, is common for testing and analysis of many types although the reference may not indicate that simple analysis would improve the disclosed invention.

In response to applicant's arguments concerning the previous rejection of claim 18 in view of Hashimoto, the examiner respectfully withdraws the previous rejection and submits new grounds for rejection.

In response to applicant's arguments concerning the previous rejection of claims 26-27 over Gerish, the examiner respectfully disagrees. Claim 26 has been drafted such that the scope is not limited to exclude this reference. Although the ultimate goal of Gerish differs from the disclosed invention, Gerish does determine the impedance of a transmission line. Gerish discloses monitoring frequencies at a known termination configuration and then monitoring for frequencies not equal to the first frequencies with different termination configurations. Although the intention and method of the invention are different from that of Gerish, the language of the claim does not adequately distinguish or point out these differences.

Allowable Subject Matter

Claims 1-6, 11-17, 22-25 are allowed over the prior art. Prior art of reference was not found to teach or suggest the inventive application of a standing wave based upon a half or quarter wave of the transmission line. Although it is known in the prior art to use a standing wave of twice transmission line length for impedance matching, this has been shown to be distinct from the inventive discovery.

Conclusion

Claims 19-21, 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to overcome any objections stated above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Moffat whose telephone number is (571) 272-2255. The examiner can normally be reached on Mon-Fri, from 7:15-3:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/23/06
JM

John Barlow
Supervisory Patent Examiner
Technology Center 2800